

Course title:	Basics of electronics
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Course code	Course status	Semester	Number of ECTS credits	Lecture hours
132001027	Mandatory	I	6.5	3+1+1

Study program:

Basic applied studies, ELECTRICAL ENGINEERING, study program: Computer engineering (studies last for 6 semesters, 180 ECTS credits).

Prerequisites:

No prerequisites required. For the better course understanding, parallel studying of "Basics of electrical engineering" is desirable.

Course aims:

Through this course, students are introduced with basic electronic circuits and components. Understanding of electrical circuits and components is very important for the understanding of many courses dealing with computer hardware and interfaces.

Teacher(s) and assistant(s): Ph.D. Srdjan Stanković – teacher, Mr Vesna Popović – assistant, Dipl. Ing. Željko Vujović - assistant

Teaching method:

Teaching lectures (including exercises), laboratory exercises, seminar papers, individually doing home exercises, consultations.

Course synopsis:

Preliminary weeks	Preparation and semester enrolment.
I week	Introduction ; Basics of semiconductor's physics
II week	Diodes
III week	Bipolar transistors
IV week	Basic amplifying circuits
V week	Field effect transistors (FET and MOSFET), Differential amplifier
VI week	First test
VII week	Free week
VIII week	Negative feedback; Operational amplifier
IX week	Rectifiers and rectifying filters
X week	Voltage stabilizers
XI week	Second test
XII week	Basic pulse circuits (RC, CR, comparators)
XIII week	Monostable multivibrators, Astable multivibrators
XIV week	Monostable multivibrator, circuit design in CMOS technology
XV week	D/A and A/D conversion
XVI week	Final exam
Final week	Administrative procedures.
XVIII-XXI week	Additional lessons, correction of the final exam and administrative procedures.

STUDENT WORKLOAD

<u>per week</u>	<u>per semester</u>
6.5 credits x 40/30 = 8 hours and 40 minutes	Teaching and the final exam: (8 h 35 min) x 16 = 138 hours and 40 minutes.
	Necessary preparation (before semester): 2 x (8 h 35 min) = 17 h and 20 min.
	Total work hours for the course: 6.5 x 30 hours = 195 hours
Working hours structure:	Additional hours for preparing correction of the final exam, including the exam taking: up to 39 hours.
3 hours for teaching	Work hours structure:
1 hour for exercises	138 hours and 40 minutes (lectures) + 17 hours and 20 minutes (preparation) + 39 hours (additional work)
1 hour for laboratory exercises	
3 hours and 40 minutes for individual work, including consultations.	

Lessons attendance is mandatory for students, as well as doing home and laboratory exercises and both tests.

Literature: S. Stanković, R. Laković, Elektronika, Podgorica 1999

N. Tadić, S. Stanković, N. Lekić, R. Laković, Zbirka riješenih zadataka iz elektronike, Podgorica, 2003.

The forms of knowledge testing and grading:

- Laboratory exercises carry 10 points
- Each test carries 20 points (40 points total).
- Final exam carries 50 points.

Student gets the passing grade by collecting 51 points at least.

Special remarks for the course: Laboratory exercises are organized for student groups with two students.

Teacher(s) who provided the information: Ph.D. Srdjan Stanković

Remark: